

#2 OIPE
8.11.01

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/765,272

DATE: 07/30/2001

TIME: 12:02:09

Input Set : N:\Crif3\RULE60\09765272.txt

Output Set: N:\CRF3\07302001\I765272.raw

SEQUENCE LISTING

1 (1) GENERAL INFORMATION:

5 (i) APPLICANT: Choi et. al.

9 (ii) TITLE OF INVENTION: Streptococcus pneumoniae Antigens and Vaccines

13 (iii) NUMBER OF SEQUENCES: 452

17 (iv) CORRESPONDENCE ADDRESS:

19 (A) ADDRESSEE: Human Genome Sciences, Inc.

21 (B) STREET: 9410 Key West Avenue

23 (C) CITY: Rockville

25 (D) STATE: Maryland

27 (E) COUNTRY: USA

29 (F) ZIP: 20850

33 (v) COMPUTER READABLE FORM:

35 (A) MEDIUM TYPE: Diskette, 3.50 inch, 1.4Mb storage

37 (B) COMPUTER: HP Vectra 486/33

39 (C) OPERATING SYSTEM: MSDOS version 6.2

41 (D) SOFTWARE: ASCII Text

45 (vi) CURRENT APPLICATION DATA:

C--> 47 (A) APPLICATION NUMBER: US/09/765,272

C--> 49 (B) FILING DATE: 22-Jan-2001

51 (C) CLASSIFICATION:

55 (vii) PRIOR APPLICATION DATA:

57 (A) APPLICATION NUMBER: 08/961,083

59 (B) FILING DATE:

63 (viii) ATTORNEY/AGENT INFORMATION:

65 (A) NAME: Brookes, A. Anders

67 (B) REGISTRATION NUMBER: 36,373

69 (C) REFERENCE/DOCKET NUMBER: PB340P2

C--> 73 (ix) TELECOMMUNICATION INFORMATION:

75 (A) TELEPHONE: (301) 309-8504

77 (B) TELEFAX: (301) 309-8512

85 (2) INFORMATION FOR SEQ ID NO: 1:

87 (i) SEQUENCE CHARACTERISTICS:

88 (A) LENGTH: 1999 base pairs

89 (B) TYPE: nucleic acid

90 (C) STRANDEDNESS: double

91 (D) TOPOLOGY: linear

95 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 1:

| | |
|---|-----|
| 97 TAAATCTAC GACAATAAAA ATCAACTCAT TGCTGACTTG GGTCTGAAC GCCGCGTCAA | 60 |
| 99 TGCCCAAGCT AATGATATTC CCACAGATTT GGTAAAGGCA ATCGTTTCTA TCGAAGACCA | 120 |
| 101 TCGCTTCTTC GACCACAGGG GGATTGATAC CATCCGTATC CTGGGAGCTT TCTGCGCAA | 180 |
| 103 TCTGCAAAGC AATTCCTCC AAGGTGGATC AACTCTCACC CAACAGTTGA TTAAGTTGAC | 240 |
| 105 TTACTTTTCA ACTTCGACTT CCGACCAGAC TATTTCTCGT AAGGCTCAGG AAGCTTGGTT | 300 |
| 107 AGCGATTGAG TTAGAACAAA AAGCAACCAA GCAAGAAATC TTGACCTACT ATATAAATAA | 360 |
| 109 GGTCTACATG TCTAATGGGA ACTATGGAAT GCAGACAGCA GCTCAAAACT ACTATGGTAA | 420 |
| 111 AGACCTCAAT AATTTAAGTT TACCTCAGTT AGCCTTGCTG GCTGGAATGC CTCAGGCACC | 480 |
| 113 AAACCAATAT GACCCCTATT CACATCCAGA AGCAGCCCAA GACCGCCGAA ACTTGGTCTT | 540 |

ENTERED

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```

115 ATCTGAAATG AAAAATCAAG GCTACATCTC TGCTGAACAG TATGAGAAAAG CAGTCAATAC      600
117 ACCAATTACT GATGGACTAC AAAGTCTCAA ATCAGCAAGT AATTACCCTG CTTACATGGA      660
119 TAATTACCTC AAGGAAGTCA TCAATCAAGT TGAAGAAGAA ACAGGCTATA ACCTACTCAC      720
121 AACTGGGATG GATGTCTACA CAAATGTAGA CCAAGAAGCT CAAAAACATC TGTGGGATAT      780
123 TTACAATACA GACGAATACG TTGCCATATCC AGACGATGAA TTGCAAGTCG CTTCTACCAT      840
125 TGTTCACGTT TCTAACGGTA AAGTCATTGC CCAGCTAGGA GCACGCCATC AGTCAAGTAA      900
127 TGTTCCTTC GGAATTAACC AAGCAGTAGA AACAAACCGC GACTGGGGAT CAACTATGAA      960
129 ACCGATCACA GACTATGCTC CTGCCCTTGGG GTACGGTGTC TACGATTCAA CTGCTACTAT     1020
131 CGTTCACGAT GAGCCCTATA ACTACCCTGG GACAAATACT CCTGTTTATA ACTGGGATAG     1080
133 GGGCTACTTT GGCAACATCA CCTTGCAATA CGCCCTGCAA CAATCGCGAA ACGTCCCAGC     1140
135 CGTGGAAACT CTAAACAAGG TCGGACTCAA CCGCGCCAAG ACTTTCCTAA ATGGTCTAGG     1200
137 AATCGACTAC CCAAGTATTC ACTACTCAA TGCCATTTCAGTAACACAA CCGAATCAGA     1260
139 CAAAAAATAT GGAGCAAGTA GTGAAAAGAT GGCTGCTGCT TACGCTGCCT TTGCAAATGG     1320
141 TGGAACCTAC TATAAACCAA TGTATATCCA TAAAGTCGTC TTTAGTGATG GGAGTGAAAA     1380
143 AGAGTTCTCT AATGTCGGAA CTCGTGCCAT GAAGGAAACG ACAGCCTATA TGATGACCGA     1440
145 CATGATGAAA ACAGTCTTGA CTTATGGAAC TGGACGAAAT GCCTATCTTG CTTGGCTCCC     1500
147 TCAGGCTGGT AAAACAGGAA CCTCTAACTA TACAGACGAG GAAATTGAAA ACCACATCAA     1560
149 GACCTCTCAA TTTGTAGCAC CTGATGAACT ATTTGCTGGC TATACGCGTA AATATTCAAT     1620
151 GGCTGTATGG ACAGGCTATT CTAACCGTCT GACACCACTT GTAGGCAATG GCCTTACGGT     1680
153 CGCTGCCAAA GTTTACCGCT CTATGATGAC CTACCTGTCT GAAGGAAGCA ATCCAGAAGA     1740
155 TTGGAATATA CCAGAGGGGC TCTACAGAAA TGGAGAATTC GTATTTAAAA ATGGTGCTCG     1800
157 TTCTACGTGG AACTCACCTG CTCCACAACA ACCCCCATCA ACTGAAAGTT CAAGCTCATC     1860
159 ATCAGATAGT TCAACTTCAC AGTCTAGCTC AACCCTCCA AGCACAAATA ATAGTACGAC     1920
161 TACCAATCCT AACAAATAA CGCAACAATC AAATACAACC CCTGATCAAC AAAATCAGAA     1980
163 TCCTCAACCA GCACAACCA                                     1999

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165 (2) INFORMATION FOR SEQ ID NO: 2:

167 (i) SEQUENCE CHARACTERISTICS:

168 (A) LENGTH: 666 amino acids

169 (B) TYPE: amino acid

170 (C) STRANDEDNESS: single

171 (D) TOPOLOGY: linear

173 (ii) MOLECULE TYPE: protein

178 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 2:

```

180 Lys Ile Tyr Asp Asn Lys Asn Gln Leu Ile Ala Asp Leu Gly Ser Glu
181 1 5 10 15
183 Arg Arg Val Asn Ala Gln Ala Asn Asp Ile Pro Thr Asp Leu Val Lys
184 20 25 30
186 Ala Ile Val Ser Ile Glu Asp His Arg Phe Phe Asp His Arg Gly Ile
187 35 40 45
189 Asp Thr Ile Arg Ile Leu Gly Ala Phe Leu Arg Asn Leu Gln Ser Asn
190 50 55 60
192 Ser Leu Gln Gly Gly Ser Thr Leu Thr Gln Gln Leu Ile Lys Leu Thr
193 65 70 75 80
195 Tyr Phe Ser Thr Ser Thr Ser Asp Gln Thr Ile Ser Arg Lys Ala Gln
196 85 90 95
198 Glu Ala Trp Leu Ala Ile Gln Leu Glu Gln Lys Ala Thr Lys Gln Glu
199 100 105 110
201 Ile Leu Thr Tyr Tyr Ile Asn Lys Val Tyr Met Ser Asn Gly Asn Tyr
202 115 120 125

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| | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 204 | Gly | Met | Gln | Thr | Ala | Ala | Gln | Asn | Tyr | Tyr | Gly | Lys | Asp | Leu | Asn | Asn |
| 205 | | 130 | | | | | 135 | | | | | 140 | | | | |
| 207 | Leu | Ser | Leu | Pro | Gln | Leu | Ala | Leu | Leu | Ala | Gly | Met | Pro | Gln | Ala | Pro |
| 208 | 145 | | | | | 150 | | | | | 155 | | | | | 160 |
| 210 | Asn | Gln | Tyr | Asp | Pro | Tyr | Ser | His | Pro | Glu | Ala | Ala | Gln | Asp | Arg | Arg |
| 211 | | | | | 165 | | | | | 170 | | | | | 175 | |
| 213 | Asn | Leu | Val | Leu | Ser | Glu | Met | Lys | Asn | Gln | Gly | Tyr | Ile | Ser | Ala | Glu |
| 214 | | | | 180 | | | | | 185 | | | | | 190 | | |
| 216 | Gln | Tyr | Glu | Lys | Ala | Val | Asn | Thr | Pro | Ile | Thr | Asp | Gly | Leu | Gln | Ser |
| 217 | | 195 | | | | | | 200 | | | | | 205 | | | |
| 219 | Leu | Lys | Ser | Ala | Ser | Asn | Tyr | Pro | Ala | Tyr | Met | Asp | Asn | Tyr | Leu | Lys |
| 220 | | 210 | | | | | 215 | | | | | 220 | | | | |
| 222 | Glu | Val | Ile | Asn | Gln | Val | Glu | Glu | Glu | Thr | Gly | Tyr | Asn | Leu | Leu | Thr |
| 223 | 225 | | | | | 230 | | | | | 235 | | | | | 240 |
| 225 | Thr | Gly | Met | Asp | Val | Tyr | Thr | Asn | Val | Asp | Gln | Glu | Ala | Gln | Lys | His |
| 226 | | | | 245 | | | | | | 250 | | | | | 255 | |
| 228 | Leu | Trp | Asp | Ile | Tyr | Asn | Thr | Asp | Glu | Tyr | Val | Ala | Tyr | Pro | Asp | Asp |
| 229 | | | 260 | | | | | 265 | | | | | | 270 | | |
| 231 | Glu | Leu | Gln | Val | Ala | Ser | Thr | Ile | Val | Asp | Val | Ser | Asn | Gly | Lys | Val |
| 232 | | 275 | | | | | | 280 | | | | | 285 | | | |
| 234 | Ile | Ala | Gln | Leu | Gly | Ala | Arg | His | Gln | Ser | Ser | Asn | Val | Ser | Phe | Gly |
| 235 | | 290 | | | | | 295 | | | | | 300 | | | | |
| 237 | Ile | Asn | Gln | Ala | Val | Glu | Thr | Asn | Arg | Asp | Trp | Gly | Ser | Thr | Met | Lys |
| 238 | 305 | | | | | 310 | | | | | 315 | | | | | 320 |
| 240 | Pro | Ile | Thr | Asp | Tyr | Ala | Pro | Ala | Leu | Glu | Tyr | Gly | Val | Tyr | Asp | Ser |
| 241 | | | | 325 | | | | | | 330 | | | | | 335 | |
| 243 | Thr | Ala | Thr | Ile | Val | His | Asp | Glu | Pro | Tyr | Asn | Tyr | Pro | Gly | Thr | Asn |
| 244 | | | 340 | | | | | 345 | | | | | | 350 | | |
| 246 | Thr | Pro | Val | Tyr | Asn | Trp | Asp | Arg | Gly | Tyr | Phe | Gly | Asn | Ile | Thr | Leu |
| 247 | | 355 | | | | | 360 | | | | | | 365 | | | |
| 249 | Gln | Tyr | Ala | Leu | Gln | Gln | Ser | Arg | Asn | Val | Pro | Ala | Val | Glu | Thr | Leu |
| 250 | | 370 | | | | | 375 | | | | | 380 | | | | |
| 252 | Asn | Lys | Val | Gly | Leu | Asn | Arg | Ala | Lys | Thr | Phe | Leu | Asn | Gly | Leu | Gly |
| 253 | 385 | | | | | 390 | | | | | 395 | | | | | 400 |
| 255 | Ile | Asp | Tyr | Pro | Ser | Ile | His | Tyr | Ser | Asn | Ala | Ile | Ser | Ser | Asn | Thr |
| 256 | | | | 405 | | | | | | 410 | | | | | 415 | |
| 258 | Thr | Glu | Ser | Asp | Lys | Lys | Tyr | Gly | Ala | Ser | Ser | Glu | Lys | Met | Ala | Ala |
| 259 | | | 420 | | | | | 425 | | | | | | 430 | | |
| 261 | Ala | Tyr | Ala | Ala | Phe | Ala | Asn | Gly | Gly | Thr | Tyr | Tyr | Lys | Pro | Met | Tyr |
| 262 | | 435 | | | | | | 440 | | | | | 445 | | | |
| 264 | Ile | His | Lys | Val | Val | Phe | Ser | Asp | Gly | Ser | Glu | Lys | Glu | Phe | Ser | Asn |
| 265 | | 450 | | | | | 455 | | | | | 460 | | | | |
| 267 | Val | Gly | Thr | Arg | Ala | Met | Lys | Glu | Thr | Thr | Ala | Tyr | Met | Met | Thr | Asp |
| 268 | 465 | | | | | 470 | | | | | 475 | | | | | 480 |
| 270 | Met | Met | Lys | Thr | Val | Leu | Thr | Tyr | Gly | Thr | Gly | Arg | Asn | Ala | Tyr | Leu |
| 271 | | | | 485 | | | | | | 490 | | | | | 495 | |
| 273 | Ala | Trp | Leu | Pro | Gln | Ala | Gly | Lys | Thr | Gly | Thr | Ser | Asn | Tyr | Thr | Asp |
| 274 | | | 500 | | | | | | 505 | | | | | 510 | | |
| 276 | Glu | Glu | Ile | Glu | Asn | His | Ile | Lys | Thr | Ser | Gln | Phe | Val | Ala | Pro | Asp |

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```

277          515          520          525
279      Glu Leu Phe Ala Gly Tyr Thr Arg Lys Tyr Ser Met Ala Val Trp Thr
280          530          535          540
282      Gly Tyr Ser Asn Arg Leu Thr Pro Leu Val Gly Asn Gly Leu Thr Val
283      545          550          555          560
285      Ala Ala Lys Val Tyr Arg Ser Met Met Thr Tyr Leu Ser Glu Gly Ser
286          565          570          575
288      Asn Pro Glu Asp Trp Asn Ile Pro Glu Gly Leu Tyr Arg Asn Gly Glu
289          580          585          590
291      Phe Val Phe Lys Asn Gly Ala Arg Ser Thr Trp Asn Ser Pro Ala Pro
292          595          600          605
294      Gln Gln Pro Pro Ser Thr Glu Ser Ser Ser Ser Ser Ser Asp Ser Ser
295          610          615          620
297      Thr Ser Gln Ser Ser Ser Thr Thr Pro Ser Thr Asn Asn Ser Thr Thr
298      625          630          635          640
300      Thr Asn Pro Asn Asn Asn Thr Gln Gln Ser Asn Thr Thr Pro Asp Gln
301          645          650          655
303      Gln Asn Gln Asn Pro Gln Pro Ala Gln Pro
304          660          665

```

(2) INFORMATION FOR SEQ ID NO: 3:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 1714 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: double

(D) TOPOLOGY: linear

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 3:

```

318 AAATTACAAT ACGGACTATG AATTGACCTC TGGAGAAAAA TTACCTCTTC CTAAAGAGAT      60
320 TTCAGGTTAC ACTTATATTG GATATATCAA AGAGGGAAAA ACGACTTCTG AGTCTGAAGT      120
322 AAGTAATCAA AAGAGTTCAG TTGCCACTCC TACAAAACAA CAAAAGGTGG ATTATAATGT      180
324 TACACCGAAT TTTGTAGACC ATCCATCAAC AGTACAAGCT ATTCAGGAAC AAACACCTGT      240
326 TTCTTCAACT AAGCCGACAG AAGTTCAGT AGTTGAAAAA CCTTCTCTTA CTGAATTAAT      300
328 CAATCCAAGA AAAGAAGAGA AACAATCTTC AGATTCTCAA GAACAATTAG CCGAACATAA      360
330 GAATCTAGAA ACGAAGAAAG AGGAGAAGAT TTCTCCAAAA GAAAAGACTG GGGTAAATAC      420
332 ATTAAATCCA CAGGATGAAG TTTTATCAGG TCAATTGAAC AAACCTGAAC TCTTATATCG      480
334 TGAGGAAACT ATGGAGACAA AAATAGATTT TCAAGAAGAA ATTCAAGAAA ATCCTGATTT      540
336 AGCTGAAGGA ACTGTAAGAG TAAAACAAGA AGGTAAATTA GGTAAGAAAG TTGAAATCGT      600
338 CAGAATATTC TCTGTAAACA AGGAAGAAGT TTCGCGAGAA ATTGTTTCAA CTTCAACGAC      660
340 TGCGCCTAGT CCAAGAATAG TCGAAAAAGG TACTAAAAAA ACTCAAGTTA TAAAGGAACA      720
342 ACCTGAGACT GGTGTAGAAC ATAAGGACGT ACAGTCTGGA GCTATTGTTG AACCCGCAAT      780
344 TCAGCCTGAG TTGCCCGAAG CTGTAGTAAG TGACAAAGGC GAACCAGAAG TTCAACCTAC      840
346 ATTACCCGAA GCAGTTGTGA CCGACAAAGG TGAGACTGAG GTTCAACCAG AGTCGCCAGA      900
348 TACTGTGGTA AGTGATAAAG GTGAACCAGA GCAGGTAGCA CCGCTTCCAG AATATAAGGG      960
350 TAATATTGAG CAAGTAAAAC CTGAAAACCTCC GGTGAGAAG ACCAAAGAAC AAGGTCCAGA      1020
352 AAAAACTGAA GAAGTTCAG TAAAACCAAC AGAAGAAACA CCAGTAAATC CAAATGAAGG      1080
354 TACTACAGAA GGAACCTCAA TTCAAGAAGC AGAAAATCCA GTTCAACCTG CAGAAGAATC      1140
356 AACAACGAAT TCAGAGAAAG TATCACCAGA TACATCTAGC AAAAATACTG GGGAGGTGTC      1200
358 CAGTAATCCT AGTGATTCTG CAACCTCAGT TGGAGAATCA AATAAACCAG AACATAATGA      1260
360 CTCTAAAAAT GAAAATTCTG AAAAACTGT AGAAGAAGTT CCAGTAAATC CAAATGAAGG      1320
362 CACAGTAGAA GGTACCTCAA ATCAAGAAAC AGAAAAACCA GTTCAACCTG CAGAAGAAAC      1380

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```

364 ACAAACAAAC TCTGGGAAAA TAGCTAACGA AAATACTGGA GAAGTATCCA ATAAACCTAG      1440
366 TGATTCAAAA CCACCAGTTG AAGAATCAAA TCAACCAGAA AAAAACGGAA CTGCAACAAA      1500
368 ACCAGAAAAT TCAGGTAATA CAACATCAGA GAATGGACAA ACAGAACCAG AACCATCAAA      1560
370 CGGAAATTCA ACTGAGGATG TTTCAACCGA ATCAAACACA TCCAATTCAA ATGGAAACGA      1620
372 AGAAATTAAA CAAGAAAATG AACTAGACCC TGATAAAAAG GTAGAAGAAC CAGAGAAAAC      1680
374 ACTTGAATTA AGAAATGTTT CCGACCTAGA GTTA                                1714
376 (2) INFORMATION FOR SEQ ID NO: 4:
378     (i) SEQUENCE CHARACTERISTICS:
379         (A) LENGTH: 571 amino acids
380         (B) TYPE: amino acid
381         (C) STRANDEDNESS: single
382         (D) TOPOLOGY: linear
384     (ii) MOLECULE TYPE: protein
389     (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 4:
391     Asn Tyr Asn Thr Asp Tyr Glu Leu Thr Ser Gly Glu Lys Leu Pro Leu
392     1           5           10           15
394     Pro Lys Glu Ile Ser Gly Tyr Thr Tyr Ile Gly Tyr Ile Lys Glu Gly
395           20           25           30
397     Lys Thr Thr Ser Glu Ser Glu Val Ser Asn Gln Lys Ser Ser Val Ala
398           35           40           45
400     Thr Pro Thr Lys Gln Gln Lys Val Asp Tyr Asn Val Thr Pro Asn Phe
401           50           55           60
403     Val Asp His Pro Ser Thr Val Gln Ala Ile Gln Glu Gln Thr Pro Val
404           65           70           75           80
406     Ser Ser Thr Lys Pro Thr Glu Val Gln Val Val Glu Lys Pro Phe Ser
407           85           90           95
409     Thr Glu Leu Ile Asn Pro Arg Lys Glu Glu Lys Gln Ser Ser Asp Ser
410           100          105          110
412     Gln Glu Gln Leu Ala Glu His Lys Asn Leu Glu Thr Lys Lys Glu Glu
413           115          120          125
415     Lys Ile Ser Pro Lys Glu Lys Thr Gly Val Asn Thr Leu Asn Pro Gln
416           130          135          140
418     Asp Glu Val Leu Ser Gly Gln Leu Asn Lys Pro Glu Leu Leu Tyr Arg
419           145          150          155          160
421     Glu Glu Thr Met Glu Thr Lys Ile Asp Phe Gln Glu Glu Ile Gln Glu
422           165          170          175
424     Asn Pro Asp Leu Ala Glu Gly Thr Val Arg Val Lys Gln Glu Gly Lys
425           180          185          190
427     Leu Gly Lys Lys Val Glu Ile Val Arg Ile Phe Ser Val Asn Lys Glu
428           195          200          205
430     Glu Val Ser Arg Glu Ile Val Ser Thr Ser Thr Thr Ala Pro Ser Pro
431           210          215          220
433     Arg Ile Val Glu Lys Gly Thr Lys Lys Thr Gln Val Ile Lys Glu Gln
434           225          230          235          240
436     Pro Glu Thr Gly Val Glu His Lys Asp Val Gln Ser Gly Ala Ile Val
437           245          250          255
439     Glu Pro Ala Ile Gln Pro Glu Leu Pro Glu Ala Val Val Ser Asp Lys
440           260          265          270
442     Gly Glu Pro Glu Val Gln Pro Thr Leu Pro Glu Ala Val Val Thr Asp

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VERIFICATION SUMMARY

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Input Set : N:\Crf3\RULE60\09765272.txt

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L:47 M:220 C: Keyword misspelled or invalid format, [(A) APPLICATION NUMBER:]
L:49 M:220 C: Keyword misspelled or invalid format, [(B) FILING DATE:]
L:73 M:220 C: Keyword misspelled or invalid format, [(ix) TELECOMMUNICATION INFORMATION:]
L:853 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:10
L:2649 M:111 C: (47) String data converted to upper case,
M:111 Repeated in SeqNo=41
L:2885 M:111 C: (47) String data converted to upper case,
M:111 Repeated in SeqNo=45
L:2927 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:46
L:2984 M:111 C: (47) String data converted to upper case,
M:111 Repeated in SeqNo=47
L:3320 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:52
L:3641 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:56
L:3825 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:58
L:3828 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:58
L:4317 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:66
L:4395 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:66
L:4966 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:74
L:5102 M:111 C: (47) String data converted to upper case,
M:111 Repeated in SeqNo=75
L:5172 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:76
L:5365 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:80
L:5398 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:80
L:5533 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:82
L:7004 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:106
L:7007 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:106
L:7019 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:106
L:7034 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:106
L:7075 M:111 C: (47) String data converted to upper case,
M:111 Repeated in SeqNo=107
L:7616 M:111 C: (47) String data converted to upper case,
L:7764 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:118
L:7944 M:111 C: (47) String data converted to upper case,
L:8040 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:120
L:10220 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:160
L:10343 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:162
L:10809 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:172
L:10812 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:172
L:10815 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:172
L:11039 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:176
L:11932 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:194
L:14181 M:111 C: (47) String data converted to upper case,
L:17498 M:336 W: Invalid Amino Acid Number in Coding Region, SEQ ID:452